

WHAT IS CLAIMED IS:

- Suk J*
- 5
1. In combination, a camera body and a photographic film cartridge detachably attachable to the camera body, the combination comprising:
the camera body including a light control device for communicating an image to a film in the cartridge in the camera body, and camera operating elements for permitting communication of an image through the light control device to the film;
- the cartridge comprising an unexposed film spool region, a second spool region spaced from the unexposed film spool region and a bridging portion between the unexposed film spool region and the second spool region such that the film can be advanced from the unexposed film spool region past the bridging portion to the second spool region, and when the cartridge is in the camera body, the bridging portion is positioned with respect to the lens in the camera body so that an image can be captured on film then at the bridging portion;
- film operating elements in the camera body and cooperating film operating elements on the cartridge for being operated together for advancing the film in the cartridge from the unexposed film spool region to the second spool region past the bridging portion;
- the bridging portion being so shaped with respect to the cartridge and the camera body as to define a dark room for film passing between the unexposed film spool region and the second spool region;
- 20 a light transmission opening in the cartridge at the bridging portion, the opening being positioned such that when the cartridge is in engagement with the camera body, and with the opening open, film at the bridging portion is presented for exposure by light passing the lens and the opening in the film cartridge;

5

a door on the film cartridge, the door is shaped to prevent light from entering through the opening into the darkroom in the cartridge; the door being selectively moveable between a closed position where the door blocks the opening in the cartridge and an open position wherein the door has been moved to open the opening in the cartridge and permit exposure of film at the bridging region in the darkroom.

SEARCHED - INDEXED - SERIALIZED - FILED

2. The combination of claim 1, wherein the door is adapted to remain in the closed position until the cartridge is fully engaged in the camera body.
3. The combination of claim 2, further comprising cooperating devices on the camera body and at the door on the cartridge for moving the door to the open position upon the cartridge being fully engaged with the camera body.
4. The combination of claim 3, wherein when the cartridge and the camera body are fully engaged, the cartridge being shaped to define a region which is light sealed except for light entering the camera body and into the cartridge by the lens for exposing film in the bridging portion of the cartridge.
5. The combination of claim 3, further comprising an actuator connected with the door for moving the door between the open and closed positions.
6. The combination of claim 5, further comprising a safety latch on the cartridge for the door, and the actuator cooperating with the safety latch for releasing the safety latch for enabling movement of the door from the closed position to the open position.

7. The combination of claim 6, further comprising a spring connected with the door for moving the door from the closed position to the open position upon release of the latch.
8. The combination of claim 5, further comprising the door being pivotally supported to the cartridge to pivot between the open and closed positions.
9. The combination of claim 5, wherein the door is supported to the cartridge to translate along the cartridge between the closed and open positions.
10. The combination of claim 6, further comprising the safety latch for the door being operable to free the door to move from the open to the closed position thereof.
11. The combination of claim 10, further comprising a spring for moving the door from the open to the closed position thereof.
12. The combination of claim 10, wherein the actuator is so connected to the cartridge and the camera body as to be operable to move the door between the positions thereof upon engagement and upon removal of the cartridge and the camera body.
13. The combination of claim 5, wherein the actuator is user operable and is operable upon full engagement of the cartridge with the camera body.
14. The combination of claim 5, wherein the camera body

SEARCHED INDEXED
SERIALIZED FILED

- includes a shutter at the lens and includes an operator for operating the shutter.
15. The combination of claim 14, wherein the shutter operator is connected with the actuator such that the actuator is operated for moving the door from the closed to the open position upon operation of the shutter.
16. The combination of claim 1, further comprising a film or cannister for the film and located at the unexposed film spool region of the cartridge, such that during advancement of the film past the bridging portion, the film is transferred from the cannister to the second spool region.
17. The combination of claim 1, further comprising a cannister for the film and located at the second spool region of the cartridge, such that during advancement of the film for exposure past the bridging portion, the film is transferred from the second spool region to the cannister.
18. The combination of claim 1, further comprising a shutter on the camera body for selectively blocking and opening the light control device and an operator on the camera body connected with the shutter and operable for opening the light control device.
19. The combination of claim 1, wherein the film cartridge comprises a housing in which the film is disposed and the housing being shaped to seal the film from exposure to light except through the opening closeable by the door.
20. The combination of claim 19, further comprising a narrow slot

between the unexposed spool region and the bridging portion through which the film can pass and the slot being narrowed to substantially seal the unexposed film spool region from light.

21. The combination of claim 1, wherein the camera body has an enclosed chamber therein and the cartridge is shaped to be received in and is receivable in the chamber in the camera body to define the combination, and wherein the door is operable to the open position only with the cartridge fully installed in the camera body.

22. A photographic film cartridge for detachable attachment to a camera body, the film cartridge comprising:

an unexposed film spool region, a second spool region spaced from the unexposed film spool region and a bridging portion between the unexposed film spool region and the second spool region such that the film can be advanced from the unexposed film spool region past the bridging portion to the second spool region;

the bridging portion being so shaped with respect to the cartridge and the camera body as to define a dark room for film passing between the unexposed film spool region and the second spool region;

a light transmission opening in the cartridge at the bridging portion, the opening being positioned such that when the cartridge is in engagement with the camera body, and with the opening open, film at the bridging portion is presented for exposure by light passing the lens and the opening in the film cartridge;

a door on the film cartridge, the door is shaped to prevent light from entering through the opening into the darkroom in the cartridge; the door being selectively moveable between a closed position where the door blocks the opening in the cartridge and an open position wherein the door has been moved to open the

opening in the cartridge and permit exposure of film at the bridging region in the darkroom.

23. The cartridge of claim 22, further comprising an actuator connected with the door for moving the door between the open and closed positions.

24. The cartridge of claim 23, further comprising a safety latch on the cartridge for the door, and the actuator cooperating with the safety latch for releasing the safety latch for enabling movement of the door from the closed position to the open position.

25. The cartridge of claim 24, further comprising a spring connected with the door for moving the door from the open to the closed positions upon release of the latch.

26. The cartridge of claim 22, further comprising a film or a cannister for the film located at the unexposed film spool region of the cartridge, and during advancement of the film past the bridging portion, the film is transferred to the second spool region.

27. The cartridge of claim 22, further comprising a cannister for the film located at the second spool region of the cartridge, such that during advancement of the film for exposure past the bridging portion, the film is transferred from the to the cannister.

28. The cartridge of claim 22, wherein the film cartridge

SEARCHED SERIALIZED INDEXED

comprises a housing in which the film is disposed and the housing being shaped to seal the film from exposure to light except through the opening closeable by the door.

29. The cartridge of claim 28, further comprising a narrow slot between the unexposed spool region and the bridging portion through which the film can pass and the slot being narrowed to substantially seal the unexposed film spool region from light.

30. The cartridge of claim 22, further comprising the cartridge including a first part having one of the film spool regions and a second part including the other film spool region and the bridging portion;

5 a separable latching connection between the first and second parts of the cartridge, wherein upon the cartridge parts being latched, film can pass between the spooling regions past the bridging portion, and with the parts unlatched and separable, access to the first spool is enabled.

31. The cartridge of claim 30, further comprising a film or a cannister for the film disposed in the first part of the cartridge and the film is removable from the first part to be drawn past the bridging portion to the spooling region in the second part of the cartridge.

32. The combination of claim 3, further comprising respective cooperating indexing elements on the cartridge and in the camera body positioned to be engaged as the cartridge is being installed on the camera body for positioning the cartridge at a particular location at the camera body to permit light and image to pass 5 to the film in the cartridge.

33. A camera body for receiving a photographic film cartridge in a detachable manner, the camera body including:
- 5 a body, a receptacle in the body shaped to the shape of a film cartridge to be disposed in the receptacle;
- 10 a light control device on the camera body for passing light into the camera body receptacle to illuminate an area of the cartridge disposed therein;
- a holding device inside the camera body receptacle facing toward the cartridge and biased into engagement with the cartridge for retaining a cartridge installed in the camera body; a release mechanism on the camera body associated with the holding device and operable by a user to release the holding device and thereby to release the cartridge for removal of the cartridge from the camera body.
34. The camera body of claim 33, wherein the cartridge holding device in the camera body and the camera body comprises at least one tab supported on the camera body and normally biased into the receptacle to engage the cartridge in the receptacle and retain the cartridge;
- 5 a lever connected with the camera body and operable into connection with the at least one tab, a manually operable switch for moving the lever to separate the at least one tab from the cartridge, thereby releasing the cartridge for removal from the camera.
35. The camera body of claim 33, further comprising an indexing projection in the camera body for cooperating with a groove in a removable film cartridge for indexing the orientation and position of the cartridge in the receptacle and holding the cartridge stationery.
36. The camera body of claim 33, further comprising camera operating

elements on the camera body including a film advance mechanism for moving the
film past the light control device, a shutter for the camera for being operated to open
the light control device to pass light and film advancing devices for advancing film
that is located in a photographic film cartridge supported in the camera body past the
light control device.

5 37. In combination, the camera body of claim 34 and a photographic film
cartridge detachably attachable in the receptacle of the camera body,

5 recesses in the photographic film cartridge adapted to be aligned with
the at least one tab in the body and to have the at least one tab snap into the recesses
for locking the cartridge in the receptacle, and the release lever being operable for
moving the at least one tab out of the recesses to free the cartridge for removal from
the receptacle of the camera body;

10 an indexing projection in the camera body for cooperating with a
groove in a removable film cartridge for indexing the orientation and position of the
cartridge in the receptacle and holding the cartridge stationary;

 the film cartridge has a groove positioned to be aligned with and
receive the projection in the receptacle of the camera body to hold the position of the
cartridge.